

## **Water Supply Well Construction Requirements**

### **Chapter 24-12(2)(V)**

No water supply well shall be constructed or used until a written approval from the DERM has been received by the owner and/or driller of the well:

1. The DERM shall be notified by the well driller at least twenty-four (24) hours prior to initiating construction of a permitted well
2. In wells where the casing is driven it shall be known as drive pipe, and shall be equipped with couplings allowing for butt joints between lengths of casing. For wells in which the casing is not driven "merchant casing," standard pipes or pipe especially constructed for gravel wall wells will be acceptable;
3. Where telescoped casing is utilized, an approved watertight seal shall be made where increases or reductions occur in casing size. The initial stage of the telescope casing shall extend a minimum of thirty (30) feet into the groundwater table;
4. When water is to be obtained from limestone strata, the casing shall extend sufficiently far into unbroken limestone to be seated firmly in it but in no case shall it be less than thirty (30) feet into the aquifer;
5. Wells drilled by the rotary method shall have an annular space sealed by the use of a neat cement grout at the bottom of the hole and to the surface by neat cement or other approved material;
6. Once the construction of the well is completed it shall be protected at all times to prevent entrance of contaminating material until such time as the pump may be placed;
7. The top of the casing shall be so constructed as to exclude any influent but shall not extend less than one (1) foot above the surface of the ground;
8. A concrete pad shall be constructed around the well a minimum of twelve (12) inches thick, two (2) feet horizontal from the casing
9. Pump houses or pump pits shall be constructed so as to provide for positive drainage. Where such is not possible sump pumps or an alternative acceptable to the DERM shall be provided. Such systems shall be installed as duplex systems;
10. Where provided, well vents shall be adequately protected;
11. In those situations where suction lines from a well casing are indicated, the suction pipe shall be so constructed to prohibit inundation. Minimum requirement shall be twelve (12) inches of clearance between the invert and ground surface;
12. A sampling tap shall be provided on the discharge of the well pump piping or in such a location as to assure a true raw water sample;
13. The use of dynamite for the construction of wells shall be prohibited;
14. Dug wells, infiltration galleries and other sources of water supply requiring rearrangement of natural features are hereby prohibited as a source of public water supply;
15. The use of surface water as a raw water source is prohibited
16. All wells shall be located on terrain not subject to ponding or flooding. Furthermore, the slope of the ground surface in the vicinity of the well(s) shall be away from the well. In level areas, well compacted earth shall be placed around the well so as to elevate the platform, pad or apron;

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17. As far as is practical, wells shall be located on the upstream side of possible sources of pollution;
18. The minimum separation between a well or wells and possible sources of contamination shall be a function of the drawdown and radius of influence of the well or wells. It shall be the responsibility of the design engineer to present data showing the radius of influence and drawdown together with a sanitary survey of the area influenced by the well. Such a survey shall extend one-half ( $\frac{1}{2}$ ) mile beyond the radius of influence of the well field. In the cases involving multiple wells the interference among wells shall be determined. It shall be the design engineer's responsibility to show that the top thirty (30) feet of the aquifer is not tapped by the well(s). In no case shall the well be located less than one hundred (100) horizontal feet from any source of contamination. However the DERM shall have the power to require additional spacing when conditions justify;
19. All wells shall be accessible for such attention as necessary;
20. All wells shall be equipped with an opening suitable for introduction of a disinfecting agent and measurement of drawdown and static water level;
21. When using chlorine as a disinfecting agent, a quantity, at least equal to the volume of the casing, of a strength of fifty (50) milligrams per liter shall be injected into the well. The solution shall be permitted to stand a minimum of twenty-four (24) hours and then pumped out for a sufficient length of time to remove the disinfecting agent;
22. Once the well has been evacuated in accordance with subsection (21), a series of twenty (20) or more daily samples, twenty (20) series, shall be collected and submitted to the Division of Health laboratory, the well being pumped for a minimum of thirty (30) minutes each day at its proposed capacity just prior to collecting the samples. At the discretion of the DERM the samples may be reduced to duplicate daily samples for a minimum of ten (10) days. Such samples will necessitate pumping for a minimum of thirty (30) minutes as indicated above;
23. Interpretation of the laboratory results in the well survey will be made in accordance with applicable parts of the water supply standards;
24. Once the series of twenty (20) or more consecutive satisfactory samples have been collected a complete analysis shall be performed of the raw water for both physical and chemical characteristics of the complete analysis shall be furnished to the DERM.